

Tplunkett
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19. (Previously amended) A method of estimating the susceptibility of an individual to have offspring that develop a developmental disorder comprising:

- (a) collecting a biological sample from one or more participants; wherein a participant is either the individual or a blood relative of the individual; and wherein the biological sample contains nucleic acids and/or proteins of the participant;
- (b) analyzing the nucleic acids and/or proteins from the biological sample; wherein said analyzing results in a partial or full genotype for the alleles of two or more genes involved in folate, pyridoxine, and/or cobalamin metabolism; and wherein said partial or full genotype forms a dataset of genetic explanatory variables for the participants;
- (c) adding the datasets of genetic explanatory variables obtained from steps (a) and (b) to a genetic reference dataset therein forming a combined genetic dataset;
- (d) formulating a model comprising the genetic explanatory variables obtained from the participants; and
- (e) analyzing the combined genetic dataset by binary logistic regression;
wherein a predicted probability for the individual to have offspring that develop a developmental disorder is determined; and wherein the genetic and environmental susceptibility of an individual to have offspring that develop a developmental disorder is estimated, and wherein the individual is a pregnant woman.

20. (Original) The method of Claim 19 further comprising the step of :

- (f) modifying the model by adding or subtracting a genetic explanatory variable; and re-analyzing the combined genetic dataset by binary logistic regression; wherein a model is chosen that best fits the data.

21. (Original) The method of Claim 20 further comprising the step of :

- (g) testing the model for goodness of fit.

29. (Previously amended) A method of treating an asymptomatic individual determined by the method of Claim 21 to be susceptible to have offspring that develop a developmental disorder comprising administering methylfolate, cobalamin or pyridoxine.

24. (Previously amended) A method of lowering the risk of a pregnant woman who has been determined by the method of Claim 21 to be susceptible to have offspring that develop a developmental disorder comprising administering methylfolate, cobalamin or pyridoxine to the pregnant woman, wherein said administering lowers the risk of the pregnant woman of giving birth to offspring with a developmental disorder.

25. (Previously amended) A method of determining if any treatment is advisable for a pregnant woman who has been determined by the method of Claim 21 to be susceptible to having offspring that develop a developmental disorder comprising determining the concentration of a risk factor from a tissue sample or body fluid from the pregnant woman; wherein when the concentration of the risk factor is statistically above or below an accepted normal range, treatment is advisable.

26. (Original) A method of monitoring the effect of the administration of methylfolate, cobalamin or pyridoxine to the pregnant woman of Claim 25, comprising determining the concentration of a risk factor from a tissue sample or body fluid from the pregnant woman; and wherein when the concentration of the risk factor is statistically within an accepted normal range, the treatment is effective.

27. (Original) The method of Claim 26 wherein the risk factor is selected from the group consisting of homocysteine, folate, and cobalamin.